

## SEQUENCE LISTING

<110> Yamaguchi, Shotaro  
Matsuura, Akira

<120> NOVEL PROTEIN-DEAMIDATING ENZYME, GENE ENCODING THE  
SAME, PRODUCTION PROCESS THEREFOR, AND USE THEREOF

<130> Q-54362

<140> 09/324,910

<141> 1999-06-03

<150> HEI-10-173940

<151> 1998-06-04

<160> 12

<170> PatentIn Ver. 2.0

<210> 1

<211> 20

<212> PRT

<213> Chryseobacterium gleum

<400> 1

Ala	Val	Ser	Val	Ile	Pro	Asp	Leu	Ala	Thr	Leu	Asn	Ser	Leu	Phe	Thr
1				5					10					15	

Gln	Ile	Lys	Asn
			20

<210> 2

<211> 20

<212> PRT

<213> Chryseobacterium gleum

<400> 2

Ser	Pro	Ser	Gly	Ser	Leu	Leu	Tyr	Asp	Asn	Asn	Tyr	Val	Asn	Thr	Asn
1				5					10					15	

Cys	Val	Leu	Asn
			20

<210> 3

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA

<220>

<221> modified\_base

<222> (3)

<223> i

<220>  
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 <223> i

<220>  
 <221> modified\_base  
 <222> (12)  
 <223> i

<220>  
 <221> modified\_base  
 <222> (18)  
 <223> A, T, C or G

<400> 3  
 wsngtnathc cngayytnac

20

<210> 4  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA

<220>  
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 <222> (3)  
 <223> A, T, C or G

<220>  
 <221> modified\_base  
 <222> (12)  
 <223> A, T, C or G

<220>  
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 <222> (18)  
 <223> A, T, C or G

<400> 4  
 arnacrcart tngtrttnac

20

<210> 5  
 <211> 555  
 <212> DNA  
 <213> Chryseobacterium gleum

<400> 5  
 gcagtcagtg ttattcctga tctggcaacg ctgaacagtt tatttaccca gatcaaaaac 60  
 caggcttgcg gaacttctac agcatcttct ccttgatca ccttcagata tccggttgac 120  
 ggatgttatg caagggtca caaatgaga caaatcctat tgaacgccgg ctatgactgt 180

gaaaagcagt tcgtatatgg taatctgaga gcttctacag gaacatgctg tgtatcatgg 240  
 gtatatcacg tagcaatttt ggtaagcttc aaaaatgctt caggaattgt tgaaaaaaga 300  
 atcatagatc cttcattatt ctccagcggt cctgtaacag attctgcatg gagagctgca 360  
 tgtaccaaca caagctgcgg atctgcgtct gtatcttcct acgccaatac agcaggaaat 420  
 gtttactaca gaagtcgctc aggttcatta ctgtatgata acaactatgt gaataccaat 480  
 tgtgtattaa acatattctc atccctttca ggatgttctc cttccccagc accaagtgtg 540  
 gcaagctgtg gattt 555

<210> 6

<211> 185

<212> PRT

<213> Chryseobacterium gleum

<400> 6

Ala Val Ser Val Ile Pro Asp Leu Ala Thr Leu Asn Ser Leu Phe Thr  
 1 5 10 15

Gln Ile Lys Asn Gln Ala Cys Gly Thr Ser Thr Ala Ser Ser Pro Cys  
 20 25 30

Ile Thr Phe Arg Tyr Pro Val Asp Gly Cys Tyr Ala Arg Ala His Lys  
 35 40 45

Met Arg Gln Ile Leu Leu Asn Ala Gly Tyr Asp Cys Glu Lys Gln Phe  
 50 55 60

Val Tyr Gly Asn Leu Arg Ala Ser Thr Gly Thr Cys Cys Val Ser Trp  
 65 70 75 80

Val Tyr His Val Ala Ile Leu Val Ser Phe Lys Asn Ala Ser Gly Ile  
 85 90 95

Val Glu Lys Arg Ile Ile Asp Pro Ser Leu Phe Ser Ser Gly Pro Val  
 100 105 110

Thr Asp Ser Ala Trp Arg Ala Ala Cys Thr Asn Thr Ser Cys Gly Ser  
 115 120 125

Ala Ser Val Ser Ser Tyr Ala Asn Thr Ala Gly Asn Val Tyr Tyr Arg  
 130 135 140

Ser Pro Ser Gly Ser Leu Leu Tyr Asp Asn Asn Tyr Val Asn Thr Asn  
 145 150 155 160

Cys Val Leu Asn Ile Phe Ser Ser Leu Ser Gly Cys Ser Pro Ser Pro  
 165 170 175

Ala Pro Ser Val Ala Ser Cys Gly Phe  
 180 185

<210> 7  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 7  
 gcgaattcgc agtcagtgtt attcctgatc 30

<210> 8  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 8  
 tagaattctt aaaatccaca gcttgctac 29

<210> 9  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 9  
 gcgtcgacgc agtcagtgtt attcctgatc 30

<210> 10  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 10  
 taggatcctt aaaatccaca gcttgctac 29

<210> 11  
 <211> 1080  
 <212> DNA  
 <213> Chryseobacterium gleum

<220>  
 <221> sig\_peptide  
 <222> (61)..(462)

<220>  
 <221> mat\_peptide  
 <222> (463)..(1017)

<220>  
 <221> CDS  
 <222> (61)..(1017)

<400> 11

aataagtga ctattacaat taaaaagttc actaaaacta aacaccaaaa tataaaaaact 60

atg aaa aaa ttt ctg tta tcc atg atg gca ttc gtg acg att ctg tca 108  
 Met Lys Lys Phe Leu Leu Ser Met Met Ala Phe Val Thr Ile Leu Ser  
                   -130                  -125                  -120

ttc aat gcc tgc tca gat tca agt gcc aac cag gac ccg aat ctt gtc 156  
 Phe Asn Ala Cys Ser Asp Ser Ser Ala Asn Gln Asp Pro Asn Leu Val  
                   -115                  -110                  -105

gct aaa gaa tct aac gaa gtc gct atg aaa gat ttc ggt aag act gtt 204  
 Ala Lys Glu Ser Asn Glu Val Ala Met Lys Asp Phe Gly Lys Thr Val  
                   -100                  -95                  -90

ccg gta ggg att gaa aaa gaa gat gga aaa ttt aaa atc tca ttt atg 252  
 Pro Val Gly Ile Glu Lys Glu Asp Gly Lys Phe Lys Ile Ser Phe Met  
                   -85                  -80                  -75

gtt act gcc cag ccg tat gaa att gcg gac agt aaa gaa aat gca ggt 300  
 Val Thr Ala Gln Pro Tyr Glu Ile Ala Asp Ser Lys Glu Asn Ala Gly  
                   -70                  -65                  -60                  -55

tat att tcc atg atc aga cag gct gtt gag aat gaa act ccc gtt cat 348  
 Tyr Ile Ser Met Ile Arg Gln Ala Val Glu Asn Glu Thr Pro Val His  
                   -50                  -45                  -40

gtt ttc ctt aaa gtc aac acc aat aaa att gca aaa gta gaa aaa gca 396  
 Val Phe Leu Lys Val Asn Thr Asn Lys Ile Ala Lys Val Glu Lys Ala  
                   -35                  -30                  -25

aca gat gat gac atc cgt tat ttt aaa tct gta ttc aac aag caa gag 444  
 Thr Asp Asp Asp Ile Arg Tyr Phe Lys Ser Val Phe Asn Lys Gln Glu  
                   -20                  -15                  -10

aga ggt gaa agc aac aaa gca gtc agt gtt att cct gat ctg gca acg 492  
 Arg Gly Glu Ser Asn Lys Ala Val Ser Val Ile Pro Asp Leu Ala Thr  
                   -5                  -1  1                  5                  10

ctg aac agt tta ttt acc cag atc aaa aac cag gct tgc gga act tct 540  
 Leu Asn Ser Leu Phe Thr Gln Ile Lys Asn Gln Ala Cys Gly Thr Ser  
                   15                  20                  25

aca gca tct tct cct tgt atc acc ttc aga tat ccg gtt gac gga tgt 588  
 Thr Ala Ser Ser Pro Cys Ile Thr Phe Arg Tyr Pro Val Asp Gly Cys  
                   30                  35                  40

tat gca agg gct cac aaa atg aga caa atc cta ttg aac gcc ggc tat 636  
 Tyr Ala Arg Ala His Lys Met Arg Gln Ile Leu Leu Asn Ala Gly Tyr  
                   45                  50                  55

gac tgt gaa aag cag ttc gta tat ggt aat ctg aga gct tct aca gga 684  
 Asp Cys Glu Lys Gln Phe Val Tyr Gly Asn Leu Arg Ala Ser Thr Gly  
 60 65 70  
 aca tgc tgt gta tca tgg gta tat cac gta gca att ttg gta agc ttc 732  
 Thr Cys Cys Val Ser Trp Val Tyr His Val Ala Ile Leu Val Ser Phe  
 75 80 85 90  
 aaa aat gct tca gga att gtt gaa aaa aga atc ata gat cct tca tta 780  
 Lys Asn Ala Ser Gly Ile Val Glu Lys Arg Ile Ile Asp Pro Ser Leu  
 95 100 105  
 ttc tcc agc ggt cct gta aca gat tct gca tgg aga gct gca tgt acc 828  
 Phe Ser Ser Gly Pro Val Thr Asp Ser Ala Trp Arg Ala Ala Cys Thr  
 110 115 120  
 aac aca agc tgc gga tct gcg tct gta tct tcc tac gcc aat aca gca 876  
 Asn Thr Ser Cys Gly Ser Ala Ser Val Ser Ser Tyr Ala Asn Thr Ala  
 125 130 135  
 gga aat gtt tac tac aga agt ccg tca ggt tca tta ctg tat gat aac 924  
 Gly Asn Val Tyr Tyr Arg Ser Pro Ser Gly Ser Leu Leu Tyr Asp Asn  
 140 145 150  
 aac tat gtg aat acc aat tgt gta tta aac ata ttc tca tcc ctt tca 972  
 Asn Tyr Val Asn Thr Asn Cys Val Leu Asn Ile Phe Ser Ser Leu Ser  
 155 160 165 170  
 gga tgt tct cct tcc cca gca cca agt gta gca agc tgt gga ttt 1017  
 Gly Cys Ser Pro Ser Pro Ala Pro Ser Val Ala Ser Cys Gly Phe  
 175 180 185  
 taattttgat acattgcagg agcttttttat ttaatacttt ttattatgaa agcctgggtcc 1077  
 tat 1080

<210> 12

<211> 319

<212> PRT

<213> Chryseobacterium gleum

<400> 12

Met Lys Lys Phe Leu Leu Ser Met Met Ala Phe Val Thr Ile Leu Ser  
 -130 -125 -120

Phe Asn Ala Cys Ser Asp Ser Ser Ala Asn Gln Asp Pro Asn Leu Val  
 -115 -110 -105

Ala Lys Glu Ser Asn Glu Val Ala Met Lys Asp Phe Gly Lys Thr Val  
 -100 -95 -90

Pro Val Gly Ile Glu Lys Glu Asp Gly Lys Phe Lys Ile Ser Phe Met  
 -85 -80 -75

Val Thr Ala Gln Pro Tyr Glu Ile Ala Asp Ser Lys Glu Asn Ala Gly  
 -70 -65 -60 -55

Tyr Ile Ser Met Ile Arg Gln Ala Val Glu Asn Glu Thr Pro Val His  
                     -50                    -45                    -40  
 Val Phe Leu Lys Val Asn Thr Asn Lys Ile Ala Lys Val Glu Lys Ala  
                     -35                    -30                    -25  
 Thr Asp Asp Asp Ile Arg Tyr Phe Lys Ser Val Phe Asn Lys Gln Glu  
                     -20                    -15                    -10  
 Arg Gly Glu Ser Asn Lys Ala Val Ser Val Ile Pro Asp Leu Ala Thr  
                     -5                    -1    1                    5                    10  
 Leu Asn Ser Leu Phe Thr Gln Ile Lys Asn Gln Ala Cys Gly Thr Ser  
                     15                    20                    25  
 Thr Ala Ser Ser Pro Cys Ile Thr Phe Arg Tyr Pro Val Asp Gly Cys  
                     30                    35                    40  
 Tyr Ala Arg Ala His Lys Met Arg Gln Ile Leu Leu Asn Ala Gly Tyr  
                     45                    50                    55  
 Asp Cys Glu Lys Gln Phe Val Tyr Gly Asn Leu Arg Ala Ser Thr Gly  
                     60                    65                    70  
 Thr Cys Cys Val Ser Trp Val Tyr His Val Ala Ile Leu Val Ser Phe  
                     75                    80                    85                    90  
 Lys Asn Ala Ser Gly Ile Val Glu Lys Arg Ile Ile Asp Pro Ser Leu  
                     95                    100                    105  
 Phe Ser Ser Gly Pro Val Thr Asp Ser Ala Trp Arg Ala Ala Cys Thr  
                     110                    115                    120  
 Asn Thr Ser Cys Gly Ser Ala Ser Val Ser Ser Tyr Ala Asn Thr Ala  
                     125                    130                    135  
 Gly Asn Val Tyr Tyr Arg Ser Pro Ser Gly Ser Leu Leu Tyr Asp Asn  
                     140                    145                    150  
 Asn Tyr Val Asn Thr Asn Cys Val Leu Asn Ile Phe Ser Ser Leu Ser  
                     155                    160                    165                    170  
 Gly Cys Ser Pro Ser Pro Ala Pro Ser Val Ala Ser Cys Gly Phe  
                     175                    180                    185